

s (tape or web) and draw? and twist?

140992 TAPE
109229 WEB
1950661 DRAW?
98058 TWIST?
L1 15367 (TAPE OR WEB) AND DRAW? AND TWIST?

=> s false twist and l1

49306 FALSE
36185 TWIST
1685 FALSE TWIST
(FALSE(W)TWIST)
L2 208 FALSE TWIST AND L1

=> s l2 and 57/clas

18574 57/CLAS
L3 75 L2 AND 57/CLAS

=> d 1-75

1. 5,503,928, Apr. 2, 1996, Fibre reinforced composites; Edward J. Cheshire, 428/357; 28/240, 243; 57/253; 264/121, 167, 172.11, 209.2, 209.5, 209.6, 232, 280, 288.4, 288.8, 291; 428/359, 397 [IMAGE AVAILABLE]

2. 5,469,149, Nov. 21, 1995, Method and apparatus for producing a wound package of an endless thermoplastic material; Tobias Binner, et al., 340/677; 57/264; 65/377, 382, 491, 492 [IMAGE AVAILABLE]

3. 5,285,624, Feb. 15, 1994, Arrangement for pneumatic false-twist spinning; Fritz Stahlecker, 57/328, 352 [IMAGE AVAILABLE]

4. 5,063,108, Nov. 5, 1991, Continuous multi-filament polyester substrate readily adherable to a vinyl sheet; James H. Whetstone, 428/369; 57/250, 251; 428/373, 375, 395 [IMAGE AVAILABLE]

5. 4,974,409, Dec. 4, 1990, Process for producing a twisted yarn feed spool; Fritz Stahlecker, et al., 57/328, 5, 293 [IMAGE AVAILABLE]

6. 4,961,308, Oct. 9, 1990, Machine for pneumatic false-twist spinning; Hans Braxmeier, 57/328, 78, 261 [IMAGE AVAILABLE]

7. 4,925,726, May 15, 1990, Wallcovering substrate formed of textured, continuous, multi-filament yarns having hydrophilic characteristics; James H. Whetstone, 428/196; 28/247; 57/246, 250, 295; 139/420A; 442/38 [IMAGE AVAILABLE]

8. 4,922,702, May 8, 1990, Stopping device for fiber material, such as a silver, roving or slubbing in a textile machine and energy storage device; Urs Meyer, 57/87; 19/0.25 [IMAGE AVAILABLE]

9. 4,870,813, Oct. 3, 1989, Ply-twist heat set carpet yarns; Thomas L. Nelson, 57/204, 205, 236, 247 [IMAGE AVAILABLE]

10. 4,858,420, Aug. 22, 1989, Pneumatic false-twist spinning process and apparatus; Fritz Stahlecker, et al., 57/328, 333, 350, 352 [IMAGE AVAILABLE]
11. 4,854,523, Aug. 8, 1989, Twisted yarn feed spool and process for producing same; Fritz Stahlecker, et al., 242/166; 57/5, 293, 328, 350; 242/167 [IMAGE AVAILABLE]
12. 4,829,761, May 16, 1989, Continuous filament yarn having spun-like or staple-like character; Bobby M. Phillips, et al., 57/248, 243, 244 [IMAGE AVAILABLE]
13. 4,790,132, Dec. 13, 1988, Process for making a false twisted differential tension yarn; Thomas L. Nelson, 57/284, 289 [IMAGE AVAILABLE]
14. 4,779,408, Oct. 25, 1988, Low-tension quenching of ply twist/heatset yarn; Thomas L. Nelson, 57/284, 290, 308, 350, 908 [IMAGE AVAILABLE]
15. 4,766,719, Aug. 30, 1988, Apparatus and method for detwisting a moving fabric; William O. Young, Jr., 57/1UN; 8/151; 57/31 [IMAGE AVAILABLE]
16. 4,714,642, Dec. 22, 1987, Carbon fiber multifilamentary tow which is particularly suited for weaving and/or resin impregnation; J. Eugene McAliley, et al., 428/113; 57/243, 250; 139/426R; 423/447.2; 428/108, 109, 114, 198, 408; 442/60, 179 [IMAGE AVAILABLE]
17. 4,704,856, Nov. 10, 1987, False twisted differential tension yarn; Thomas L. Nelson, 57/228, 247 [IMAGE AVAILABLE]
18. 4,704,853, Nov. 10, 1987, Spinning of yarn; Carl A. Lawrence, 57/401, 408 [IMAGE AVAILABLE]
19. 4,700,538, Oct. 20, 1987, Method and apparatus for handling a sliver; Andre Varga, et al., 57/90; 19/150, 159R, 243; 57/304, 315, 327, 328, 333, 350 [IMAGE AVAILABLE]
20. 4,663,927, May 12, 1987, Method and apparatus for producing slub yarn; Shigeru Takemae, et al., 57/6, 91, 207, 208, 284 [IMAGE AVAILABLE]
21. 4,631,911, Dec. 30, 1986, Apparatus for removing twist from moving fabric and method for accomplishing same; William O. Young, Jr., et al., 57/1UN; 8/151; 26/51, 74, 99; 57/31, 264; 73/159 [IMAGE AVAILABLE]
22. 4,584,830, Apr. 29, 1986, Method for producing a fiber-spun yarn; Jean L. Faure, et al., 57/328, 5, 6, 12 [IMAGE AVAILABLE]
23. 4,569,192, Feb. 11, 1986, Apparatus for producing special yarns; Yoshiharu Yamada, et al., 57/317; 19/238; 57/91, 264, 265, 328, 409 [IMAGE AVAILABLE]
24. 4,472,477, Sep. 18, 1984, Fracturable fiber cross-sections; Bobby M. Phillips, 442/193; 57/248; 428/373, 397; 442/336 [IMAGE AVAILABLE]
25. 4,433,538, Feb. 28, 1984, Textile spinning machines; John F. Graham, 57/328, 344, 346, 348 [IMAGE AVAILABLE]
26. 4,433,536, Feb. 28, 1984, Spiral wrapped synthetic twine and method of manufacturing same; John B. O'Neil, 57/233, 6, 7, 32, 234, 235, 907 [IMAGE AVAILABLE]

27. 4,399,649, Aug. 23, 1983, Spinning flyer construction; Kurt Gallina, 57/115, 117, 341 [IMAGE AVAILABLE]
28. 4,395,871, Aug. 2, 1983, Process for the manufacture of **twistless** or substantially **twistless** yarn and the yarn obtained according to this process; Jacob K. Smid, et al., 57/286, 295, 296, 297, 298 [IMAGE AVAILABLE]
29. 4,339,915, Jul. 20, 1982, Apparatus for false **twisting** yarn; Peter Dammann, et al., 57/339, 340, 348 [IMAGE AVAILABLE]
30. 4,302,929, Dec. 1, 1981, Hairy monocomponent yarn; Gunther Bauer, et al., 57/247, 288 [IMAGE AVAILABLE]
31. 4,300,344, Nov. 17, 1981, Feed yarn and process for the manufacture of a voluminous **false twist** texturized hairy yarn; Gunther Bauer, et al., 57/288, 2, 206, 208, 287 [IMAGE AVAILABLE]
32. 4,290,378, Sep. 22, 1981, **Twisted** singles carpet yarn; Arnold E. Wilkie, 112/410; 28/220, 271, 281; 57/246, 282, 350 [IMAGE AVAILABLE]
33. 4,274,251, Jun. 23, 1981, Yarn structure having main filaments and tie filaments; Charles W. Kim, et al., 57/206, 207, 248, 907; 428/397, 399 [IMAGE AVAILABLE]
34. 4,245,001, Jan. 13, 1981, Textile filaments and yarns; Bobby M. Phillips, et al., 428/373; 57/248; 428/364, 397, 400 [IMAGE AVAILABLE]
35. 4,233,363, Nov. 11, 1980, Polyester **draw**-texturing feed yarns; Albert Cemel, et al., 428/373; 57/243; 264/103; 428/364, 369, 374 [IMAGE AVAILABLE]
36. 4,179,875, Dec. 25, 1979, High tenacity, low denier poly(ethylene terephthalate) fibrillated **tape** yarn; John D. Gibbon, 57/248, 260, 907 [IMAGE AVAILABLE]
37. 4,179,874, Dec. 25, 1979, Method and apparatus for the spinning of yarn; Alan N. Jacobsen, 57/401, 406, 413 [IMAGE AVAILABLE]
38. 4,157,419, Jun. 5, 1979, Polyester feed yarn for **draw**-texturing; Michael E. Mirhej, 428/373; 57/245; 428/364, 369, 370, 371, 374 [IMAGE AVAILABLE]
39. 4,155,214, May 22, 1979, Yarn product and process; Michael E. Mirhej, 57/244, 282 [IMAGE AVAILABLE]
40. 4,115,989, Sep. 26, 1978, Product and process; Jerzy Spolnicki, 57/245; 28/257; 57/905; 428/374 [IMAGE AVAILABLE]
41. 4,112,662, Sep. 12, 1978, Winding machines; James Lappage, et al., 57/293, 331; 242/472.2, 486.3 [IMAGE AVAILABLE]
42. 4,100,725, Jul. 18, 1978, Yarn having alternating entangled and unentangled lengths; Bernard Magel, 57/206; 28/276; 57/204, 208, 243, 244, 245, 248, 253, 255, 905, 908; 428/399 [IMAGE AVAILABLE]
43. 4,091,605, May 30, 1978, Method and apparatus for the **twisting** of yarn; Alan Nicholas Jacobsen, 57/401, 406, 415 [IMAGE AVAILABLE]
44. 4,036,003, Jul. 19, 1977, Poly(ethylene terephthalate) fibrillated **tape** sewing thread; F. Ray Lowder, et al., 57/260; 28/258;

57/248, 903, 907 [IMAGE AVAILABLE]

45. 4,031,690, Jun. 28, 1977, Noise suppression apparatus and method for **false-twist** texturing machines; Lorimer Phillip Thomas, et al., 57/1R, 105, 291; 181/200 [IMAGE AVAILABLE]

46. 4,028,874, Jun. 14, 1977, Roving and process for its manufacture; Fritjof Maag, et al., 57/210, 3, 18 [IMAGE AVAILABLE]

47. 4,003,195, Jan. 18, 1977, Filamentary tow packaging method; George Arvid Fernstrom, et al., 57/293; 28/289; 57/350 [IMAGE AVAILABLE]

48. 3,987,612, Oct. 26, 1976, Method and apparatus for manufacture of composite yarn products; Emilian Bobkowicz, 57/5, 7, 297, 309; 264/103 [IMAGE AVAILABLE]

49. 3,972,176, Aug. 3, 1976, Method of treating synthetic yarns; John C. Lawson, Jr., et al., 57/309; 28/281, 285; 57/282 [IMAGE AVAILABLE]

50. 3,962,829, Jun. 15, 1976, Machines for texturizing synthetic polymer filaments; Heinz Schippers, 57/291 [IMAGE AVAILABLE]

51. 3,955,347, May 11, 1976, Anti-noise structures on multi-position textile machines; Heinz Schippers, 57/1R; 139/1R; 160/188, 331; 181/200 [IMAGE AVAILABLE]

52. 3,944,071, Mar. 16, 1976, Filamentary tow package and method for making; George Arvid Fernstrom, et al., 206/388; 28/265; 57/204 [IMAGE AVAILABLE]

53. 3,942,315, Mar. 9, 1976, Treatment of textile fibre products; Karl Bous, 57/296; 8/151; 68/19; 118/56, 427 [IMAGE AVAILABLE]

54. 3,938,314, Feb. 17, 1976, **False-twist** texturing process with hollow friction **twist** tubes; George Roy Trammell, 57/287, 290, 341, 342 [IMAGE AVAILABLE]

55. 3,924,396, Dec. 9, 1975, Composite yarn forming method and apparatus; Emilian Bobkowicz, et al., 57/5, 7, 309, 327, 400, 401, 409; 264/103 [IMAGE AVAILABLE]

56. 3,921,380, Nov. 25, 1975, Crimped continuous filament yarn and method; Alexander L. Trieunovic, et al., 57/246; 28/255, 264 [IMAGE AVAILABLE]

57. 3,900,302, Aug. 19, 1975, Method for producing glass fiber bulk product; Roland E. Langlois, et al., 65/470; 19/150; 28/281; 57/350; 65/478, 521; 226/95 [IMAGE AVAILABLE]

58. 3,878,671, Apr. 22, 1975, System for measuring the **twist** of spun yarn in open-end spinning; Pavel Seidl, et al., 57/265, 404 [IMAGE AVAILABLE]

59. 3,858,387, Jan. 7, 1975, POLYAMIDE FEED YARN FOR **FALSE-TWIST** TEXTURING, PROCESS OF **FALSE-TWIST** TEXTURING, AND PRODUCT THEREOF; Janardhana B. Baliga, et al., 57/247, 287; 528/335 [IMAGE AVAILABLE]

60. 3,857,230, Dec. 31, 1974, YARNLIKE PRODUCT WITH SPACED POLYMER RINGS; Ole-Bendt Rasmussen, 57/208, 905 [IMAGE AVAILABLE]

61. 3,848,403, Nov. 19, 1974, AERODYNAMIC SPINNING OF COMPOSITE YARN; Emilian Bobkowicz, et al., 57/5, 7, 292, 297, 401, 403 [IMAGE AVAILABLE]

62. 3,844,097, Oct. 29, 1974, COMPOSITE SPINNING; Emilian Bobkowicz, et al., 57/5, 7, 292, 297, 400, 401, 409; 264/103; 425/66 [IMAGE AVAILABLE]
63. 3,842,582, Oct. 22, 1974, APPARATUS AND PROCESS FOR IMPARTING **TWIST** TO FILAMENTARY MATERIAL; Hans H. Richter, 57/336, 339 [IMAGE AVAILABLE]
64. 3,832,840, Sep. 3, 1974, FIBROUS PRODUCT AND APPARATUS FOR AND METHOD OF PRODUCING; Roland E. Langlois, et al., 57/208; 65/523 [IMAGE AVAILABLE]
65. 3,822,543, Jul. 9, 1974, SPUN-LIKE YARN AND METHOD OF MANUFACTURING SAME; Hiroshi Edagawa, et al., 57/5; 28/254, 258; 57/6, 224, 315, 328, 350 [IMAGE AVAILABLE]
66. 3,816,993, Jun. 18, 1974, FRICTION **TWIST** TANGLING OF YARNS; Talmadge W. McWaters, 57/309, 310, 334, 337, 341 [IMAGE AVAILABLE]
67. 3,771,306, Nov. 13, 1973, FIBRILLATION PROCESS; Henry S. Ostrowski, et al., 57/31; 28/220, 272; 57/289, 290, 333; 264/DIG.47 [IMAGE AVAILABLE]
68. 3,762,142, Oct. 2, 1973, YARNLIKE PRODUCT KEPT TOGETHER BY CIRCUMJACENT POLYMER MATERIAL, AND A METHOD AND AN APPARATUS FOR PRODUCING SAID PRODUCT; Ole-Bendt Rasmussen, 57/293, 206, 297; 156/434; 264/103, 167, 171.1 [IMAGE AVAILABLE]
69. 3,751,894, Aug. 14, 1973, FALSE **TWISTING** OF YARNS; James Nelson Ruddell, 57/285; 28/271 [IMAGE AVAILABLE]
70. 3,724,198, Apr. 3, 1973, METHOD FOR PREPARING SPUN YARNS; Charles W. Kim, 57/260; 28/271, 281; 57/31, 907; 264/DIG.47 [IMAGE AVAILABLE]
71. 3,702,055, Nov. 7, 1972, METHOD FOR MANUFACTURING FALSE **TWISTED** THREADS FROM THERMOPLASTIC RESIN TAPES; Kenzo Kosaka, et al., 57/31; 28/273; 57/288, 289, 333, 907 [IMAGE AVAILABLE]
72. 3,701,245, Oct. 31, 1972, FRICTION **TWISTING** UNIT; Hans H. Richter, 57/341, 280, 343 [IMAGE AVAILABLE]
73. 3,680,303, Aug. 1, 1972, BLENDING CONTINUOUS FILAMENT YARNS; Charles W. Kim, 57/31; 28/220, 274, 281; 57/245, 260, 350, 907; 264/DIG.47 [IMAGE AVAILABLE]
74. 3,631,664, Jan. 4, 1972, METHOD OF, AND APPARATUS FOR, DELIVERING YARNS TO TEXTILE MACHINES; Alexander W. P. Mackintosh, 66/125A; 57/284, 343 [IMAGE AVAILABLE]
75. 3,583,145, Jun. 8, 1971, TEXTILE MACHINE; Daniel J. Fisher, Jr., 57/280, 290 [IMAGE AVAILABLE]